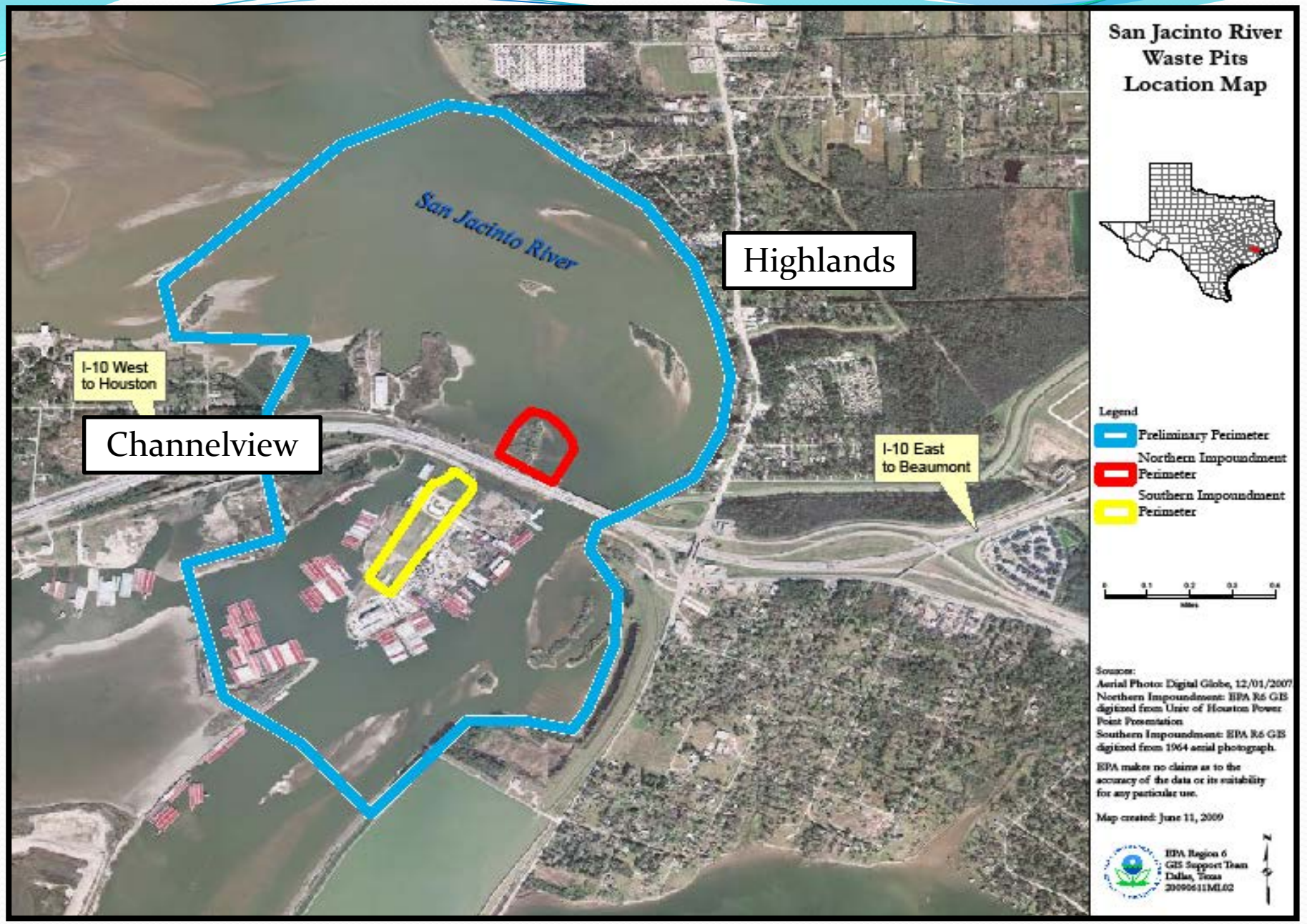
San Jacinto River Waste Pits Superfund Site

9495182

EPA United States Environmental Protection Agency


San Jacinto River
Highlands
I-10 West
to Houston
Channelview
I-10 East
to Beaumont
San Jacinto River
Waste Pits
Location Map
Legend
Preliminary Perimeter
Northern Impoundment
Perimeter
Southern Impoundment
Perimeter
Source:
Aerial Photo: Digital Globe, 12/01/2007
Northern Impoundment: EPA R6 GIS
digitized from Univ of Houston Power
Point Presentation
Southern Impoundment: EPA R6 GIS
digitized from 1964 aerial photograph.
EPA makes no claims as to the
accuracy of the data or its suitability
for any particular use.
Map created: June 11, 2009
EPA Region 6
GIS Support Team
Dallas, Texas
20090611ML02

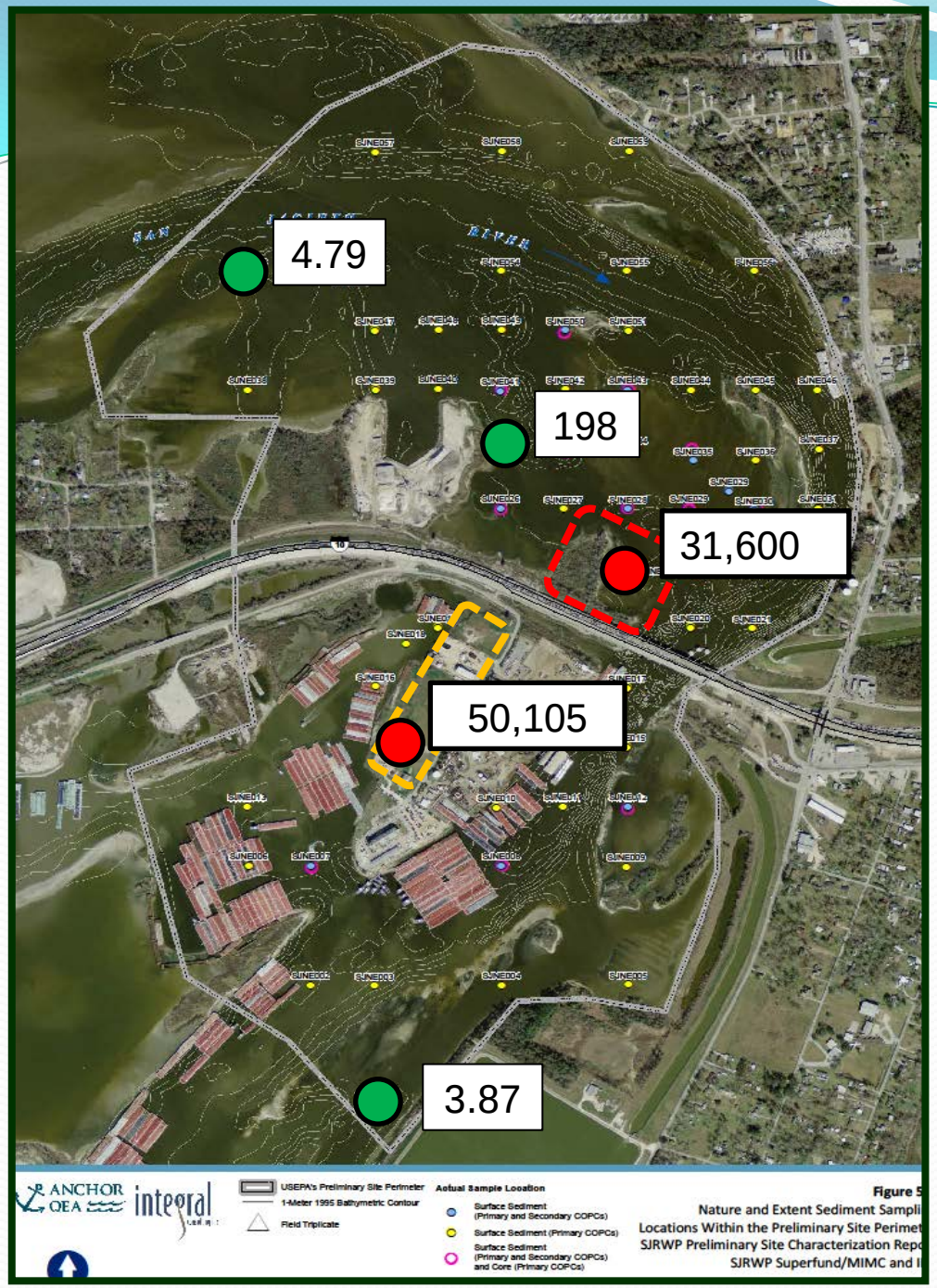
San Jacinto River Waste Pits

South Impoundment 1965

Northern Waste Pits Before Cap

North Waste Pits After Cap

Cap Construction Completed July 12, 2011



San Jacinto River Waste Pits Site

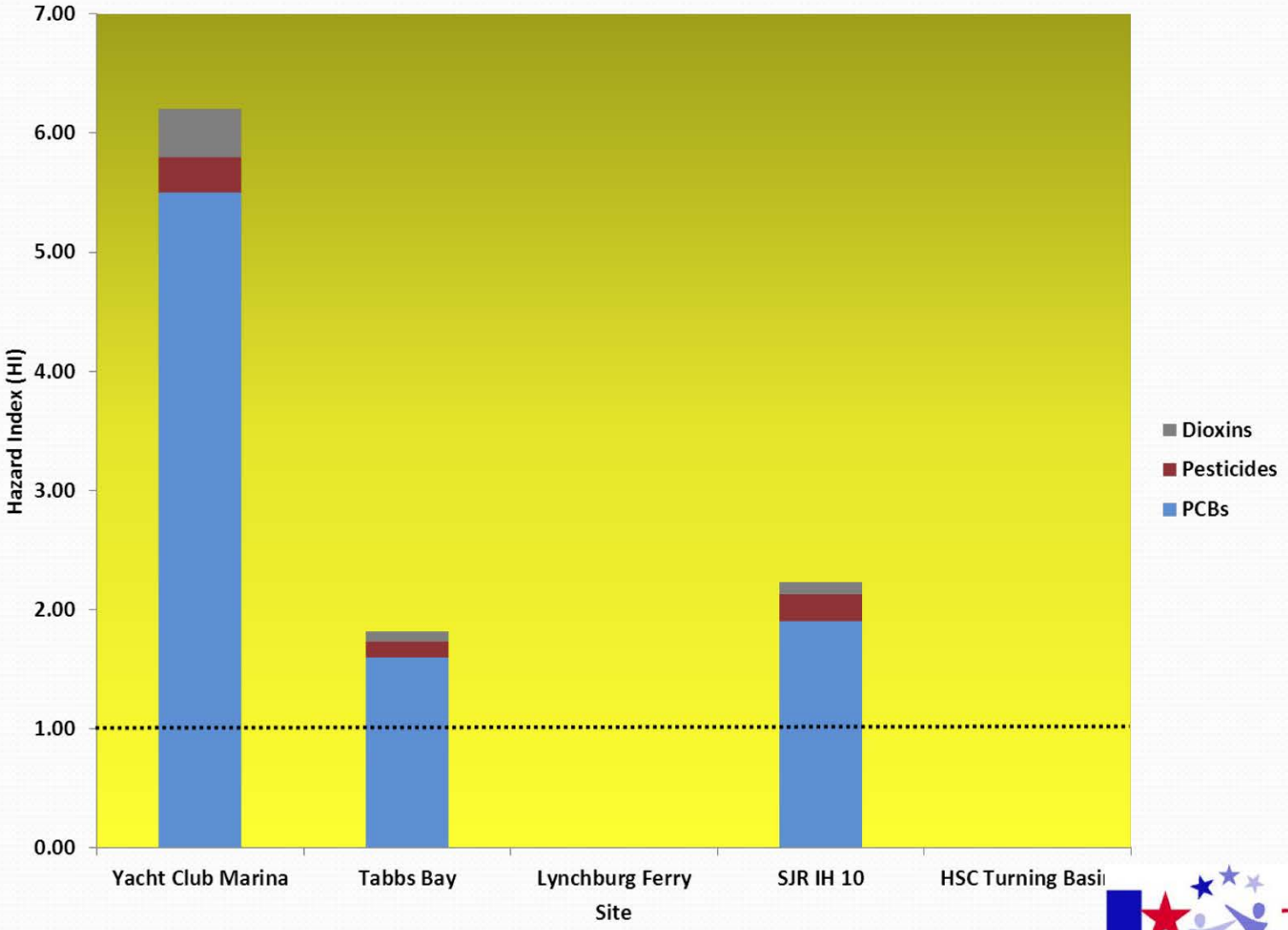
291 Surface & subsurface sediment samples within preliminary site boundary.

Waste Pits

Southern Impoundment

Sediment - ng/kg TEQ_{DF} Dioxin

Spotted Seatrout Hazard Index by Site

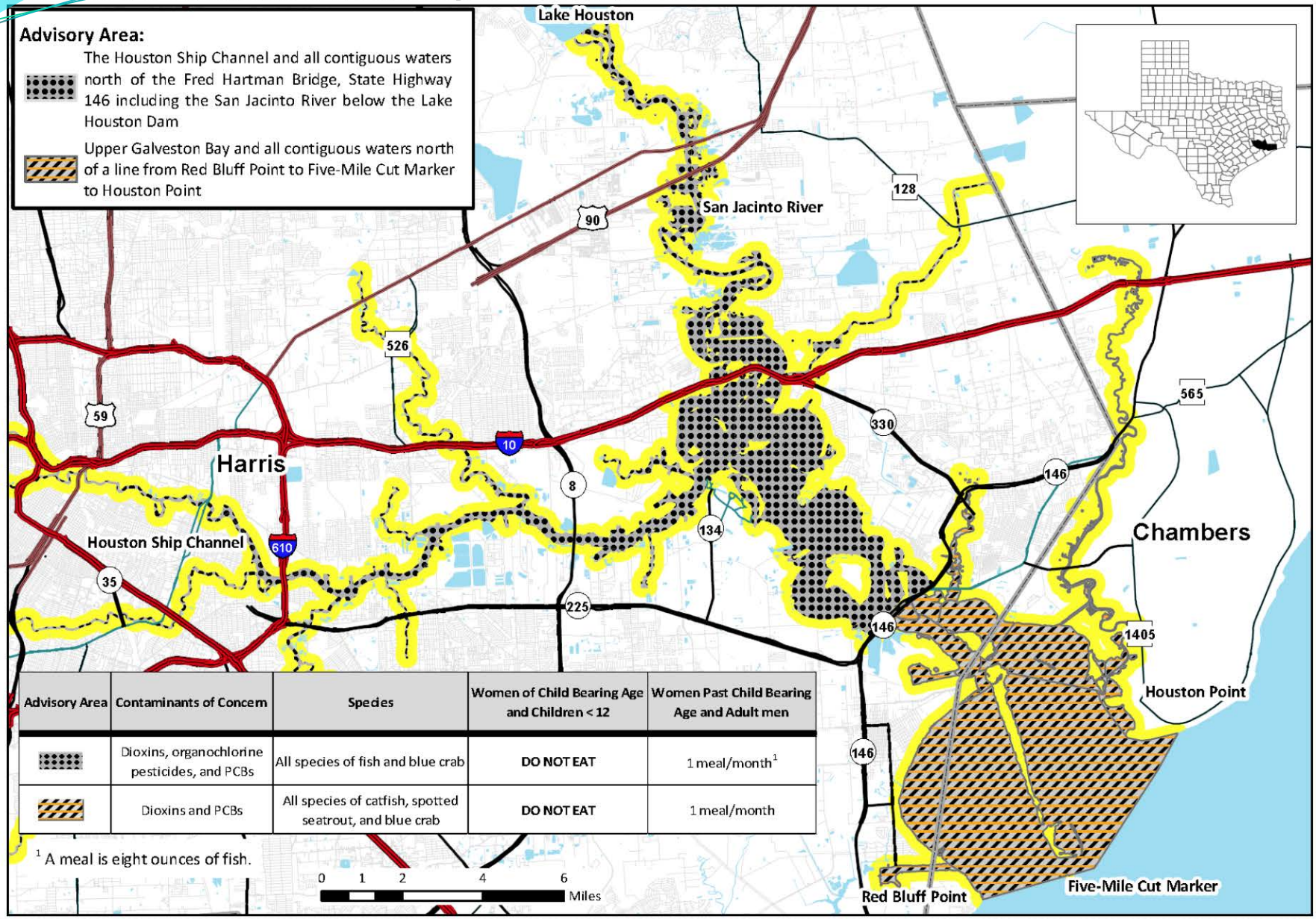


TEXAS Department of State Health Services

Galveston Bay Estuary (Map 1) – Houston Ship Channel, San Jacinto River, and Upper Galveston Bay

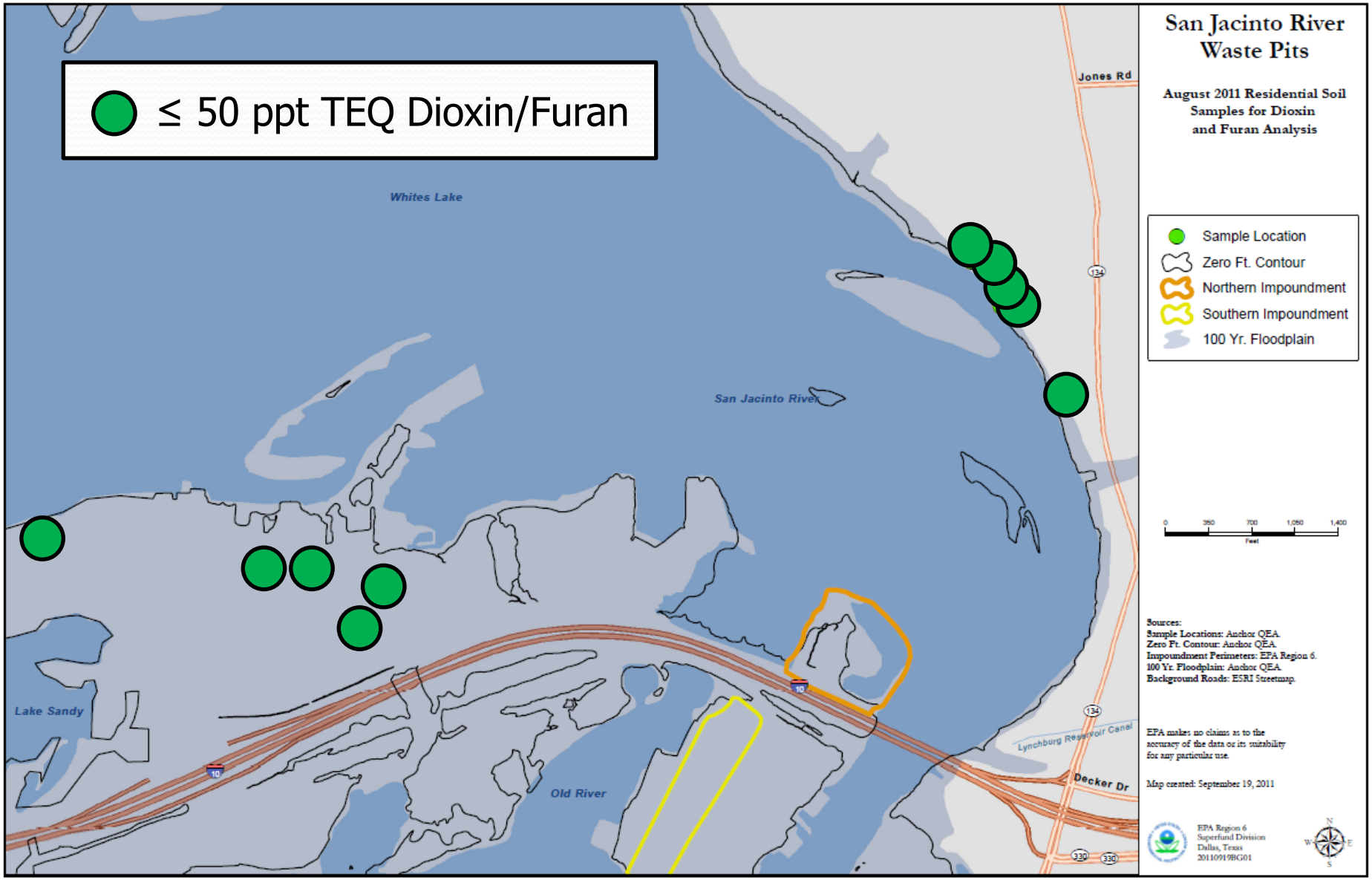
Chambers and Harris Counties

ADV-49 and ADV-50 Issued June 26, 2013 Rescinding ADV-3, ADV-20, and ADV-35



Advisory Area	Contaminants of Concern	Species	Women of Child Bearing Age and Children < 12	Women Past Child Bearing Age and Adult men
	Dioxins, organochlorine pesticides, and PCBs	All species of fish and blue crab	DO NOT EAT	1 meal/month[1]
	Dioxins and PCBs	All species of catfish, spotted seatrout, and blue crab	DO NOT EAT	1 meal/month

[1] A meal is eight ounces of fish.


≤ 50 ppt TEQ Dioxin/Furan
Whites Lake
San Jacinto River
Lake Sandy
Old River
Jones Rd
Lynchburg Reservoir Canal
Decker Dr
10
134
330
San Jacinto River Waste Pits
August 2011 Residential Soil Samples for Dioxin and Furan Analysis
Sample Location
Zero Ft. Contour
Northern Impoundment
Southern Impoundment
100 Yr. Floodplain
0 350 700 1,050 1,400
Feet
Sources:
Sample Locations: Anchor QEA.
Zero Ft. Contour: Anchor QEA.
Impoundment Perimeters: EPA Region 6.
100 Yr. Floodplain: Anchor QEA.
Background Roads: ESRI Streetmap.
EPA makes no claims as to the accuracy of the data or its suitability for any particular use.
Map created: September 19, 2011
EPA Region 6
Superfund Division
Dallas, Texas
20110919BG01
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W
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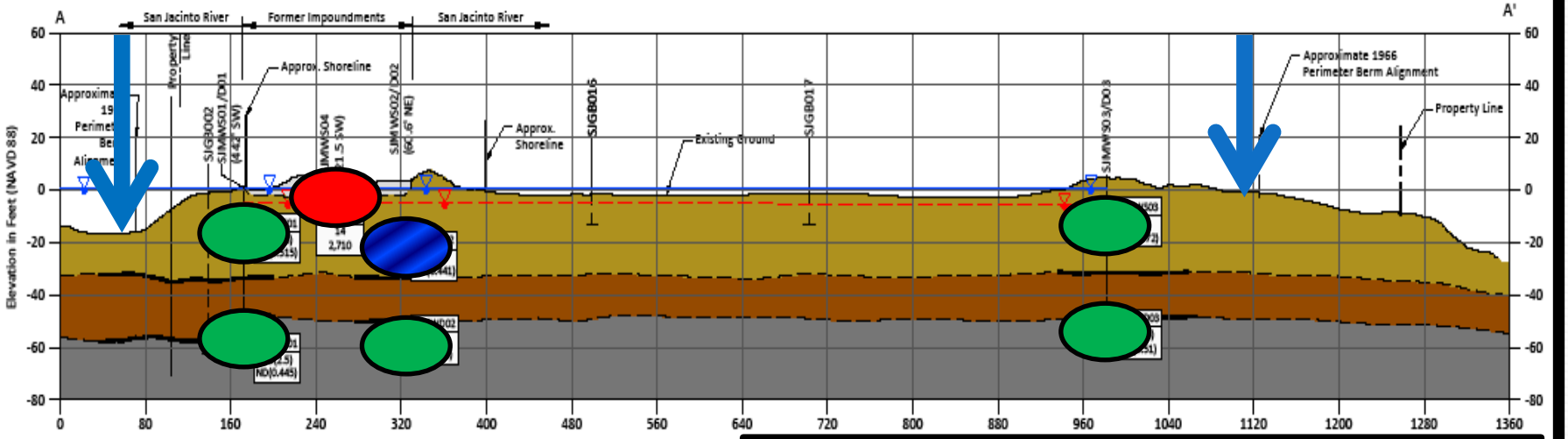
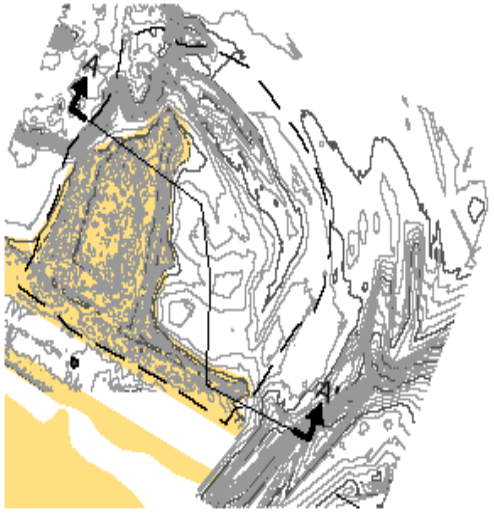
S

Groundwater Cross-Section





LEGEND:

- Boring location
- Stratigraphic Boundary
- Inferred Stratigraphic Bo
- Approximate Alluvial Pot
- Approximate Chicot Aqui
- Waste (Approximate)
- Interbedded Recent Alluv
- Clay (Brown, Red-Brown-
- SAND (Gray, Blue-Gray) U

- No Dioxin TEQ_{DF} detected in groundwater.
- 3770 pg/L Dioxin TEQ_{DF} in waste material .
- 2.64J pg/L Dioxin TEQ_{DF} in groundwater (MCL 30 pg/L).

San Jacinto River Waste Pits
Draft Feasibility Study

Preliminary Action Levels:

- 220 ng/kg (sediment outside of cap – recreational visitor).
- 450 ng/kg (soil in Southern Impoundment – construction worker).
- 1,300 ng/kg (soil/sediment within cap – industrial/commercial worker).

San Jacinto River Waste Pits Draft Feasibility Study Remediation Alternatives

Alternative 1 – No Further Action

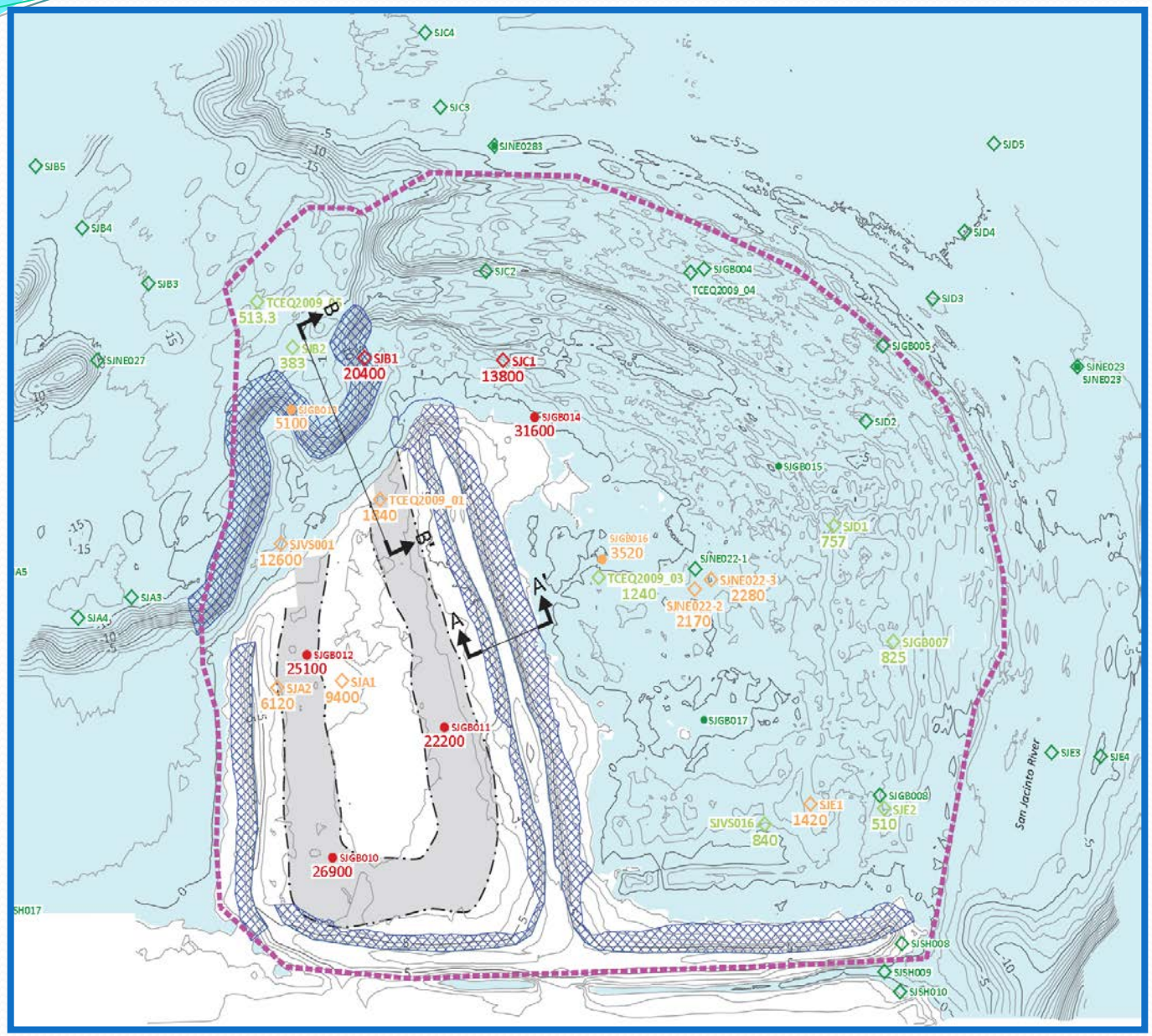
Alternative 2 – Institutional Controls ("ICs") and Monitored Natural Recovery ("MNR")

Alternative 3 – Permanent Cap, ICs, and MNR

Alternative 4 – Partial Solidification/Stabilization, Permanent Cap, ICs, and MNR

Alternative 5– Partial Removal, Permanent Cap, ICs, and MNR

Alternative 6 – Full Removal of Materials Exceeding the Protective Concentration Level, ICs, and MNR

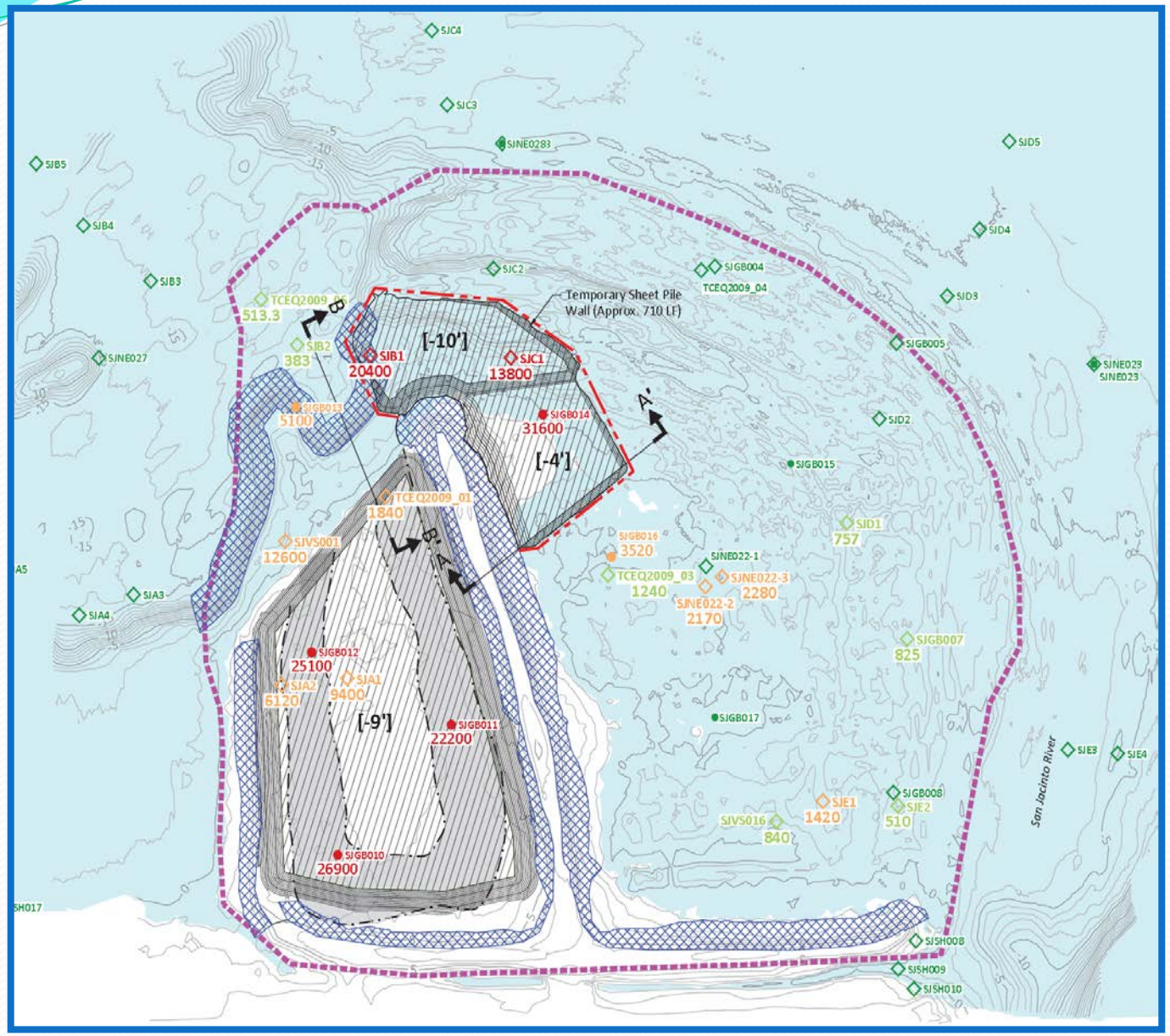


San Jacinto River Waste Pits

Alternative 3:

Cap Improvements

- 2 mo. construction
- $2.9 MM



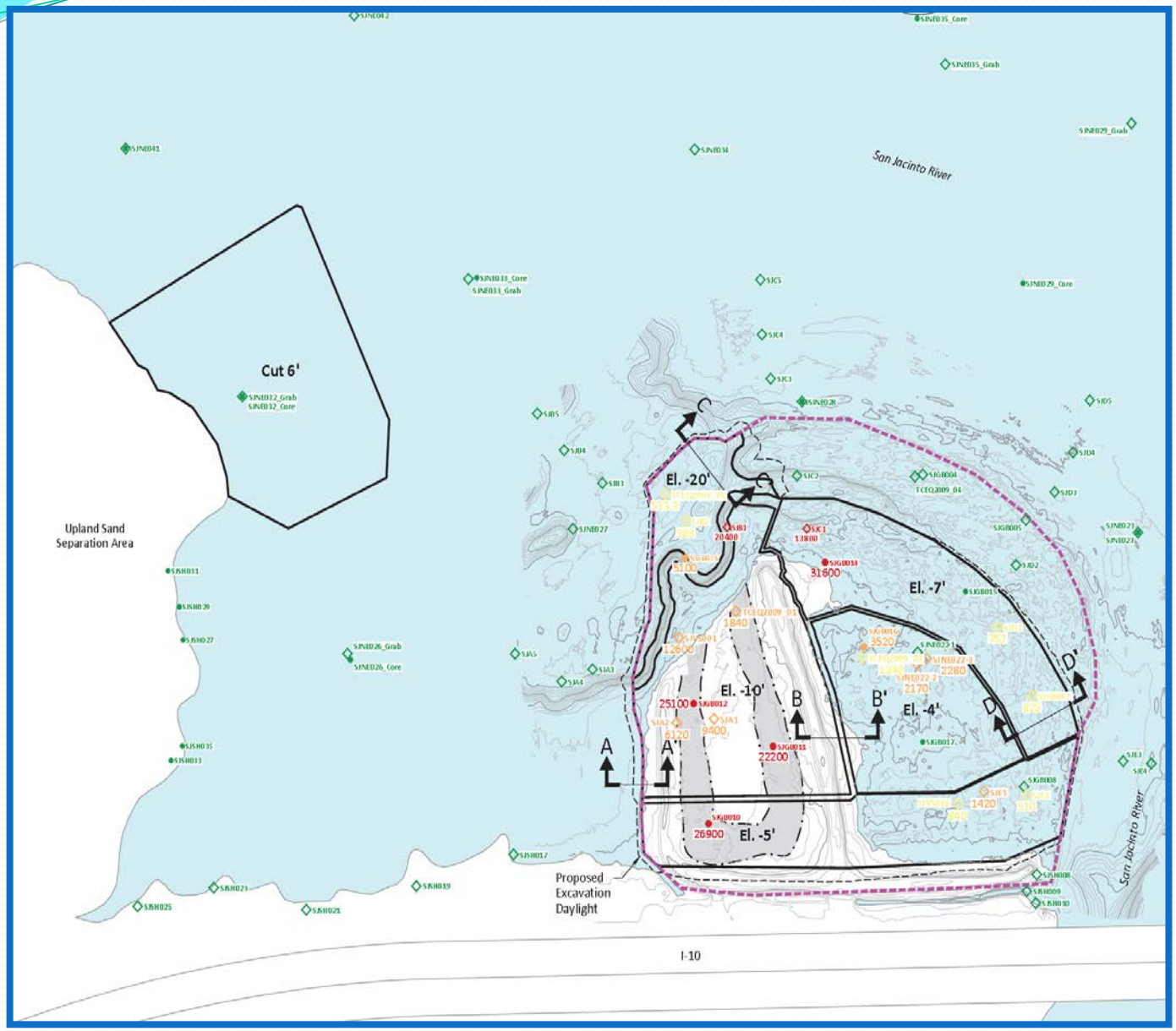
San Jacinto River Waste Pits

Alternatives 4&5:

Partial Stabilization or Removal

- 53,000 yds^3
- 12 to 15 mo. construction
- $11.2 (Alt. 4) or $24/$118 million

San Jacinto River Waste Pits



Alternative 6:

Full Removal

- 208,000 yds^3
- 16 mo. construction
- $104/$636 MM

San Jacinto River Waste Pits Feasibility Study

Pros/Cons of Alternatives:

- Alt. 3: Quickest construction (2 mo.) with least storm exposure during construction & lowest cost; but doesn't remove any waste material & has less long term protectiveness than others.
- Alt. 4: Immobilizes waste material (25%) with most contamination; but no removal & longer construction (15 mo.) means more storm exposure.
- Alt. 5: Removes waste material (25%) with most contamination; but longer construction (12 mo.) means more storm exposure.
- Alt. 6: Removes all waste material; but has longest construction time (16 mo.) & most release of contaminated material in river due to dredging.

San Jacinto River Waste Pits Feasibility Study

Revisions to Draft:

- Add new alternative with an engineered barrier (berm or sheetpiles) around northern waste pits and remove material inside.
- Evaluate major storm impacts to each of alternatives.
- Add a range of alternatives for Southern Impoundment.

Schedule

San Jacinto River Waste Pits Superfund Site

- **Feasibility Study Report**
- Final Report - March 2014

- **Proposed Plan/Public Comment Period**
- Public Comment Period & Meeting – August 2014

- **Remedy Selection (ROD)**
- September 2014

San Jacinto River Waste Pits
Update on Armor Cap

- TCRA cap erosion repaired in August 2012. The US Army Corps of Engineers reviewed the cap design and construction and determined that there are deficiencies (including slope and grading of cap materials).
- On November 1, 2013, EPA notified the Potentially Responsible Parties to address the TCRA cap design and construction protectiveness issues until the final Site remedy is selected.
- PRPs submitted armor cap "Enhancement" work plan on 11/27/13, and EPA approved plan on 01/10/14.
- Construction repairs on armor cap begin on 01/17/2014

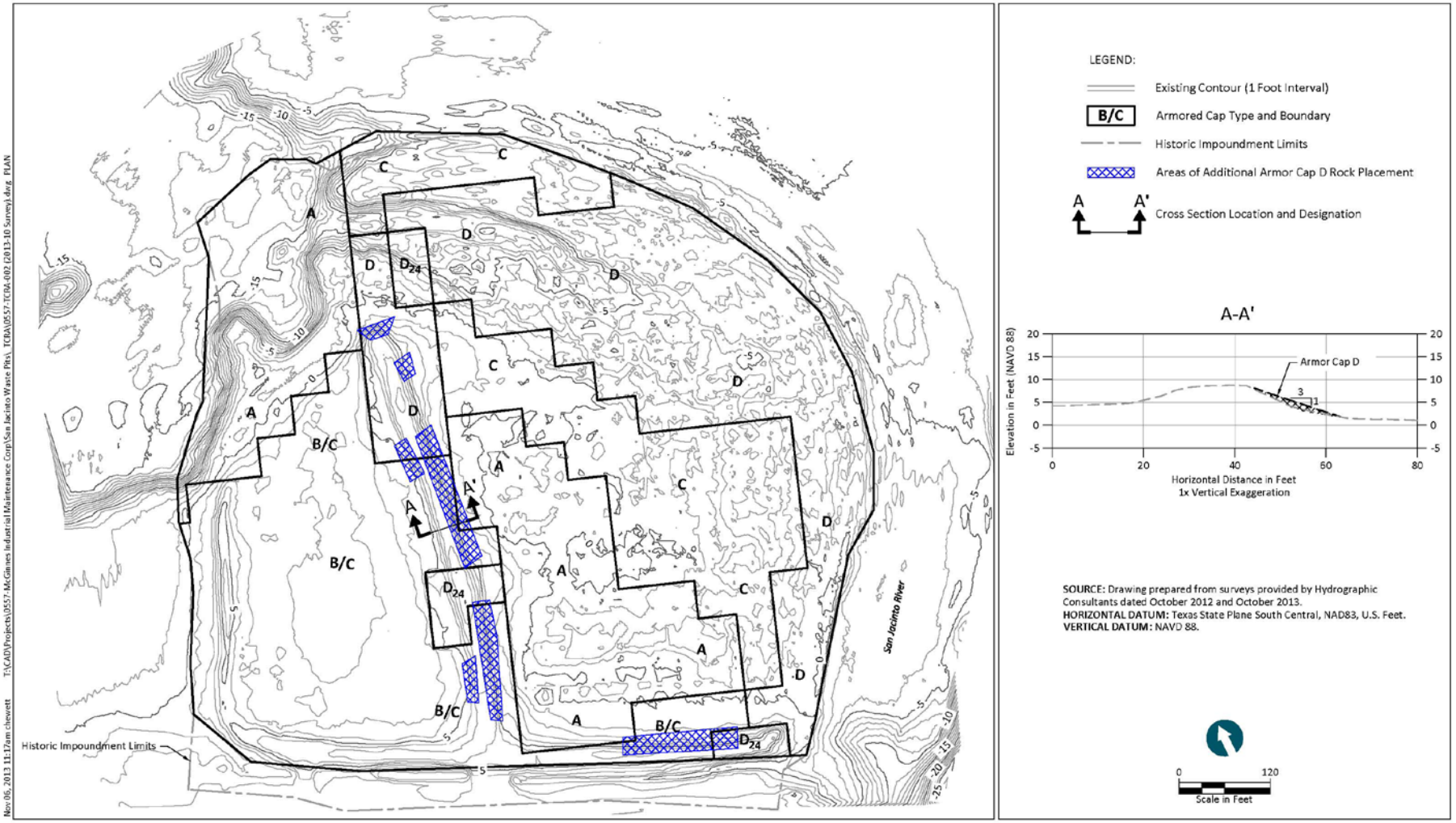


Fig. 1 – Armor Cap Enhancement Work Plan - Armor cap D placement areas with improved slope construction

Constructing enhanced slope along the South Berm in the Eastern Cell using an excavator (for grading the rock) and skid steer (for transporting rock from the stockpile and placing it)– 1-21-2014

South Berm in the Eastern Cell after completion of the enhancement work -1-21-2014

Central Berm on the eastern slope, near the north end of the berm, after completion of the enhancement work 1-22-2014